



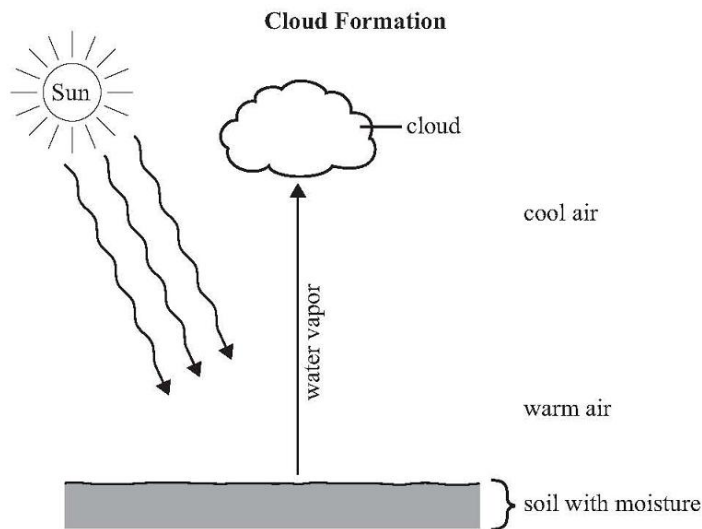
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### ISAT Sample Questions: Grade 7 Science

1. Use the diagram below to answer the question.



Which statement **best** describes the formation of a cloud?

- A. Cloud formation is an independent part of a single system called the biosphere.
- B. Cloud formation is a system that is not linked to any other system in the atmosphere.
- C. Cloud formation is part of the water cycle that operates within the larger energy system of Earth.
- D. Cloud formation is one part of the water cycle that is independent of the other parts of the cycle.



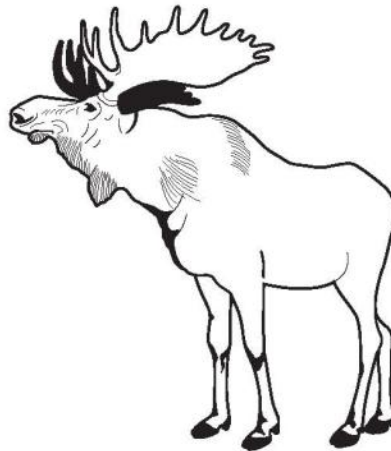
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2. Use the drawing below to answer the question.

Moose



What is the smallest structural level of a moose?

- A. eyes
  - B. cells
  - C. antlers
  - D. tissues
3. A gardener is investigating whether Brand X fertilizer will increase the growth rate of the rose plants growing in an outdoor garden. Which rose plant would be the control for this investigation?
- A. a rose plant in the garden given only water and sunlight
  - B. a rose plant in the garden given Brand X fertilizer, water, and sunlight
  - C. a rose plant in a container given Brand X fertilizer and placed inside a greenhouse
  - D. a rose plant in a container given only water and sunlight and placed inside a greenhouse



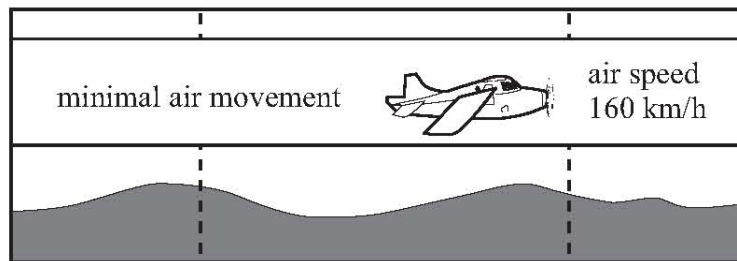
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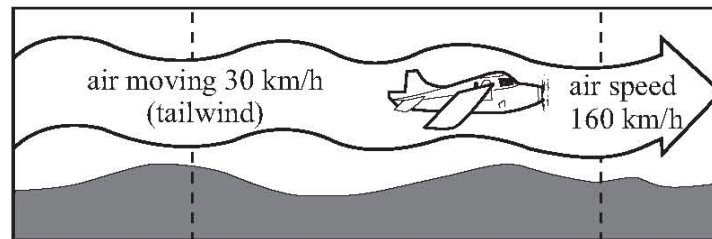
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4. Use the diagrams below to answer the question.

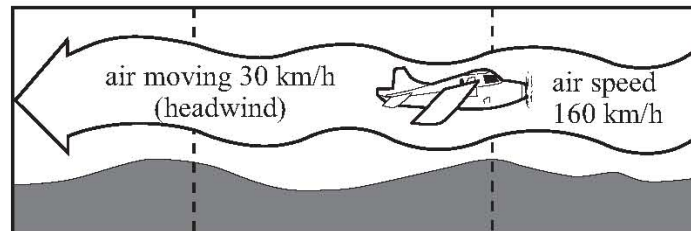
### Flight Data



ground speed 160 km/h



ground speed 190 km/h



ground speed 130 km/h

Based on the observations, a person hypothesizes that an airplane will reach its destination sooner if the airplane is affected by a headwind. Based on evidence shown in the diagrams, which statement **best** describes the person's hypothesis?

- A. It is rejected because a headwind decreases the weight of the airplane.
- B. It is accepted because a headwind decreases the downward force of gravity.
- C. It is rejected because a headwind decreases the forward movement of the airplane.
- D. It is accepted because a headwind applies more force in the direction in which the airplane is moving.



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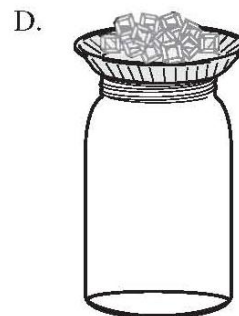
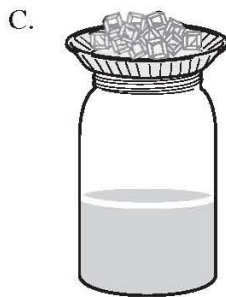
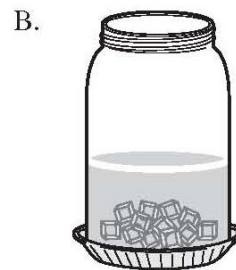
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5. Use the procedure below to answer the question.

### Investigation Procedure

1. Place ice cubes in a small metal dish.
2. Pour some warm water into a jar.
3. When the metal dish feels cold, place it on top of the jar.
4. Watch the inside of the jar carefully to see if a cloud forms near the top of the jar.

Which drawing **best** represents the correct setup for the investigation?





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6. Use the table below to answer the question.

Student	Element	Compound
1	same type of molecules	mixture of the same type of atoms
2	Same type as atoms	two or more atoms chemically combined
3	two or more atoms chemically combined	three or more atoms mixed together
4	two or more types of molecules chemically combined	same type of atoms chemically combined

Students were asked to describe an element and a compound. Which student provided the **best** descriptions?

- A. Student 1
- B. Student 2
- C. Student 3
- D. Student 4

7. Use the list below to answer the question.

**Observations of Two Fish**

- fins are small
- scales are orange and white
- fish are about the same length

Which statement **best** describes the observed properties of the fish?

- A. They are physical properties because they will not change over time.
- B. They are chemical properties because they can be used to identify the fish.
- C. They are physical properties because they can be observed without changing the structure of the fish.
- D. They are chemical properties because they help show how fish will behave in different environments.

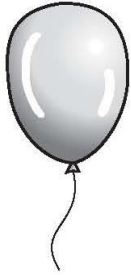


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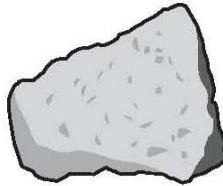
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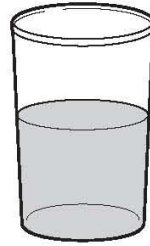
8. Use the drawings below to answer the question.



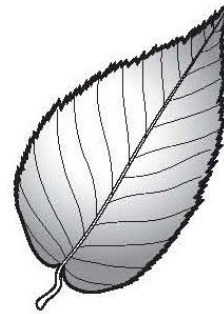
air in a balloon



rock



water in a glass



leaf

Which statement **best** explains how the density of an object could change if the temperature increased by 20°C?

- A. The air molecules in the balloon could spread apart and the balloon could expand.
  - B. The mineral molecules in the rock could spread apart and the rock could increase in mass.
  - C. The water molecules in the glass could move closer together and the glass could become more full.
  - D. The gas molecules moving in the leaf could move closer together and become liquid molecules.
9. A genetic mutation in a lizard population makes it easier for the lizards to find food. Which statement **best** describes what must also happen for natural selection to occur?
- A. The lizards must migrate to another area.
  - B. The lizards must continue to have genetic mutations.
  - C. The lizards must pass the mutated gene on to their offspring.
  - D. The lizards must share their food with other lizard populations.



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10. An average adult male African elephant has a mass of 7,000 kilograms. The mass of a newborn African elephant can range from 90-120 kilograms. Which change occurs as the mass of the young elephant increases?
- A. The elephant's cells multiply to form tissues.
  - B. New organ systems are added in the elephant.
  - C. All of the elephant's body cells increase in size.
  - D. New organs are formed in the elephant's organ systems.
11. In some horses, black hair is a dominant genetic trait to white hair. The trait for black hair is represented as B, and the trait for white hair is represented as b. Which Punnett square shows a cross between two horses resulting in a 75% chance of the offspring having black hair and 25% chance of the offspring having white hair?

A.

	B	B
b	Bb	Bb
b	Bb	Bb

B.

	b	b
B	Bb	Bb
b	bb	bb

C.

	B	b
B	BB	Bb
b	Bb	bb

D.

	B	b
B	BB	Bb
B	BB	Bb





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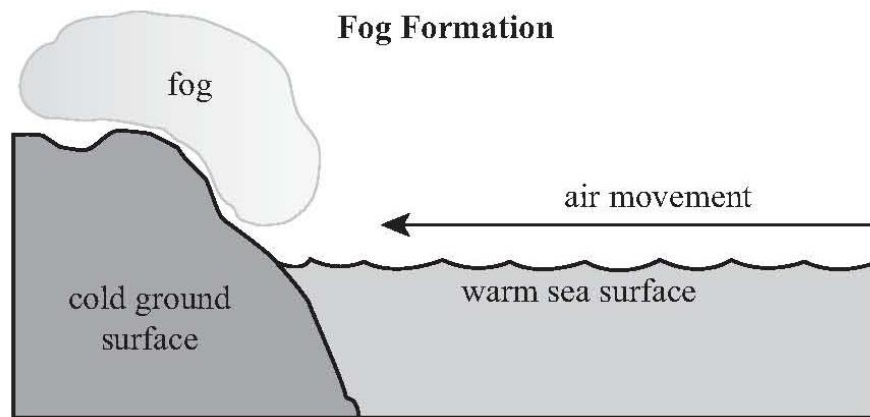
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12. Maps of the area around the Snake River in Idaho show that this area is a source of geothermal water. The area contains underground reservoirs that hold water and increase the temperature of the water by contact with the heat of Earth. Which process **most** directly affects these reservoirs?

- A. precipitation, because this process brings water to Earth's surface
- B. infiltration, because this process brings water from Earth's surface into the ground
- C. transpiration, because this process releases water vapor from plants and soil into the air
- D. condensation, because this process changes water vapor into liquid water droplets in the air

13. Use the diagram below to answer the question.



Based on the diagram, which statement **best** explains how fog forms?

- A. Cold, moist ocean air contacts the cold ground surface causing the moisture to evaporate.
- B. Warm, moist ocean air contacts the cold ground surface causing the moisture to condense.
- C. Cold, dry ocean air contacts the cold ground surface causing the air to become saturated with ocean moisture and precipitate.
- D. Warm, dry ocean air contacts the cold ground surface causing the air to become saturated with land moisture and precipitate.





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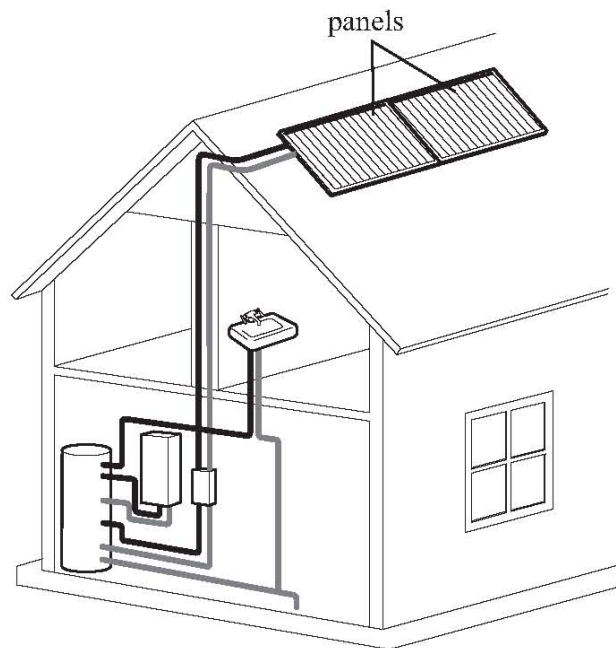
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14. Scientists wanted to identify ways of studying dinosaur fossils without damaging them. Computerized scanners and X-ray machines were used to create detailed images. These images were used to produce three-dimensional computer models of the fossils. Which statement **best** describes the relationship between science and technology that helped scientists to study these dinosaur fossils?

- A. Science relies on technology for all of its discoveries.
- B. Technology is a tool used to advance scientific knowledge.
- C. Science answers the questions that technology introduces to scientists.
- D. Technology is a process that informs scientists about the natural world.

15. Use the diagram below to answer the question.

### Alternative Energy Collection and Use





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Which type of alternative energy source is being collected by the panels on top of the building?

- A. wind
- B. solar
- C. geothermal
- D. hydroelectric



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### ISAT Sample Questions: Grade 7 Science

Question #	Correct Answer	Standard/Goal/Objective
1	C	1.1.1
2	B	1.1.3
3	A	1.6.2
4	C	1.6.4
5	C	1.8.1
6	B	2.1.1
7	C	2.1.2
8	A	2.1.4
9	C	3.1.1
10	A	3.3.1
11	C	3.3.5
12	B	4.1.1
13	B	4.1.2
14	B	5.2.1
15	B	5.3.1